I Claim:

1. A point-of-care blood measurement system for performing in-vitro diagnostic chemical analysis of a sample, comprising

a diagnostic card reader for receiving a raw analog sensory signal from a diagnostic card and for providing an amplified analog output signal directly related to the raw sensory signal, the raw sensory signal being dependent on a concentration of a chemical species in the sample,

a data acquisition unit for converting the output signal into a digital signal; and

a general-purpose computer for analyzing the digital signal and producing an analysis result representative of the chemical species concentration in the sample.

2. The system of claim 1, wherein the diagnostic card reader is a smart-card reader and the diagnostic card is a modified smart card.

3. The system of claim 1, wherein the diagnostic card reader includes amplification means for amplifying the raw analog sensory signal, and sensor multiplexing means for generating an output including signals in addition to the raw signal.

4. The system of claim 1, wherein the general-purpose computer is a portable computer and the data acquisition unit is a PC or PCMCIA card inserted into the computer.

5. The system of claim 1, wherein the general-purpose computer is a personal computer and the data acquisition unit is a data acquisition card incorporated therein.

6. The system of claim 1, wherein the diagnostic card reader and the data acquisition unit are incorporated in the same housing.

7. The system of claim 1, including a plurality of diagnostic card readers and the data acquisition card is constructed for converting the output signals of the plurality of diagnostic card readers.

8. The system of claim 7, including a plurality of data acquisition cards, whereby the single computer is connected to all data acquisition cards.

9. The system of claim 1, wherein the diagnostic card reader and the data acquisition unit are distributed components of the system and the computer is a central component located remotely therefrom, the system further including communication means for electrical or electronic communication of the digital signal to the computer.

10. The system of claim 1, wherein the conversion of the digital sensory signal into an analysis result is carried out only in the general-purpose computer by way of data-calculation software operating thereon.

11. The system of claim 1, further including measurement control means for controlling measurement conditions in the diagnostic card, the measurement control means including heating means in the card reader for heating a diagnostic card inserted therein, and control software on the general-purpose computer for operating the heating means.

12. The system of claim 1, further comprising quality control means for monitoring the quality of the raw sensory signal, which quality control means is implemented as quality-control software running only on the computer.

13. The system of claim 11, wherein the computer is constructed for providing at least one digital control signal to the card reader for operating the heating means.

14. The system of claim 13, wherein the heating means in the card reader is constructed to heat a measurement region of a diagnostic card inserted therein.

15. The system of claim 7, wherein the computer is constructed to provide a single clock signal to all card-readers by way of the data acquisition card.

16. The system of claim 1, wherein the card reader includes a means for generating an on/off signal to the data acquisition unit and general-purpose computer.

17. The system of claim 16, wherein means for generating the on/off signal is a mechanical switch which is normally in the off condition and is actuated upon insertion of a diagnostic card into the card reader.

18. A point-of-care blood measurement system for performing in-vitro diagnostic chemical analysis of a sample, comprising

a diagnostic card reader for receiving a raw analog sensory signal from a single use blood diagnostic card and for providing an analog output signal directly related to the raw sensory signal, the raw sensory signal being dependent on a concentration of a chemical species in the sample,

a data acquisition unit for converting the analog output signal into a serial digital signal and including amplification means for amplifying the raw analog sensory signal, and sensor multiplexing means for generating an output including signals in addition to the raw signal; and

a general-purpose computer for analyzing the digital signal and producing an analysis result representative of the chemical species concentration in the sample, the computer having a serial input port for connection to at least one data acquisition unit.

19. A point-of-care blood measurement system for performing in-vitro diagnostic chemical analysis of a sample, comprising

a diagnostic card reader for receiving a raw analog sensory signal from a single use blood diagnostic card and for providing an analog output signal directly related to the raw sensory signal, the raw sensory signal being dependent on a concentration of a chemical species in the sample, the diagnostic card and the card reader further including fluidics for control and/or supply of the sample fluid and other reagents or calibrants or other fluids required for the sensory analysis of the sample;

a data acquisition unit for converting the analog output signal into a serial digital signal and including amplification means for amplifying the raw analog sensory signal, sensor multiplexing means for generating an output including signals in addition to the raw signal, and a signal conversion means for converting the analog output of the card reader to a radio frequency digital signal; and

a general-purpose computer for analyzing the digital signal and producing an analysis result representative of the chemical species concentration in the sample, the computer having a radio frequency receiver attachment for receiving the radio frequency digital signal produced by the signal conversion means.

20. The system of claim 19, wherein the diagnostic card reader further includes a test circuit for quality control of the card reader and especially the interfacing thereof with the diagnostic card.

21. A card reader for use in a system as defined in claim 1, comprising

a housing;

a connector for engaging a diagnostic card and for receiving a raw analog sensory signal from the diagnostic card, the raw sensory signal being dependent on a concentration of a chemical species in the sample;

signal conversion means for converting the raw sensory signal into digital output signal directly related to the raw sensory signal; and

a transmitter for wireless digital communication with a general-purpose computer for transmitting the output signal to the computer.

22. The card reader of claim 21, wherein the diagnostic card is a modified smart card.

23. The card reader of claim 22, further including fluidics for control and/or supply of the sample fluid and other reagents or calibrants or other fluids required for the sensory analysis of the sample

24. The card reader of claim 21, further comprising means for influencing the measurement conditions in a measuring region of an inserted diagnostic card, the means for influencing including a heating means for heating the measuring region and means for controlling the heating means, whereby the means for controlling is located on the computer and the transmitter is a two way transmitter for transmitting the output signal to the computer and for receiving control signals from the computer for operation of the heating means.

25. The diagnostic card and card reader transmitter of claim 22, wherein the diagnostic card and card reader are constructed to perform an optical measurement of the sample.

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